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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,955	12/27/2001	Benjamin T. Drucker	42390P13583	9357
21906	7590	09/16/2005	EXAMINER	
TROP PRUNER & HU, PC 8554 KATY FREEWAY SUITE 100 HOUSTON, TX 77024			YANG, LINA	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/034,955	DRUCKER ET AL.	
	Examiner	Art Unit	
	Lina Yang	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/27/01; 4/21/03; 1/26/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351 (a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-3, 5-6, 15-17 and 23-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Bhagavath et al. (U.S. Patent Application Publication No. 20020021665 A1).

Regarding claim 1, Bhagavath teaches an apparatus (elements 12 and 14 in fig.

1) comprising:

at least one network interface ("a point of traffic aggregation") for coupling the apparatus to at least one network (fig. 1 and [0021]);

a packet header analyzer coupled to the network interface (element 12 in fig. 1; [0030] and [0032]);

a detected device list (user list) coupled to the packet header analyzer (fig. 5);

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a weight definition store to store respective weight values for a plurality of packet characteristics ("designated network services(addresses)" 40 in fig. 2; [0013] and [0028]; "predetermined access threshold minimum" and "status codes" stored in the database, fig. 3);

a weight calculator coupled to the packet header analyzer and to the weight definition store ("designated network services(addresses)" 40 in fig. 2; elements 120 and 150 in fig. 3); and

a packet weight history store coupled to the weight calculator (200 and 210 in fig. 3).

Regarding claim 2, Bhagavath further teaches that the apparatus further comprising: a control interface (keyboard) for receiving commands (42 in fig. 1).

Regarding claim 3, Bhagavath further teaches that the control interface being adapted to connect to a command link which is physically distinct from the at least one network (42 in fig. 1).

Regarding claim 5, Bhagavath further teaches that the apparatus further comprising at least one of a network switch, a network hub, and a network router ([0011], a gateway has to be one of a switch, a hub or a router).

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Regarding claim 6, Bhagavath further teaches that the at least one network interface comprises at least two network interfaces ("traffic aggregation point" inherently has many network connections, [0011]).

Regarding claim 15, Bhagavath teaches a method of operation of a metering device, the method comprising:

determining an identification of a network device (user or subscriber) sending or receiving a packet ([0047]);

if the identification of the network device is not already stored in a detected device list, adding the identification of the network device to the detected device list (200 and 210 in fig. 3); and

for each of at least one packet characteristic of the packet, reading a weight definition of that packet characteristic from a weight definition store, calculating a weight for the packet, and updating a packet weight history (elements 150, 200 and 210 in fig. 3) .

Regarding claim 16, Bhagavath further teaches that each of the at least one packet characteristic comprises one of: communication protocol; packet size; time that the packet was sent; time that the packet was received; current average network throughput; current peak network throughput; total amount of data transferred; total

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amount of data transferred since some particular time; total amount of data transferred since some particular event; number of packets transferred that are in a given size range; traffic to particular addresses or ports or networks or sub-nets or network devices; traffic from particular addresses or ports or networks or sub-nets or network devices; average percentage of network utilization; peak percentage of network utilization; average number of TCP sessions open; peak number of TCP sessions open; average traffic level of a particular protocol; average traffic level of a particular protocol; and percentage mixes of specified protocols among the current network traffic ([0047] to [0055]).

Regarding claim 17, Bhagavath further teaches redefining the weight definition (for example, the designated network address) in the weight definition store, of at least one packet characteristic (the designated network address can be determined on fly, [0013]).

Regarding claim 23, Bhagavath teaches an article of manufacture comprising: a machine-accessible medium (elements 34, 36, 38 and 40 in fig. 2, they are accessible to 12 and 14) including data that, when accessed by a machine, cause the machine to, analyze a packet header of a packet ([0030] and [0032]), identify a first network device which sent the packet (the packet header inherently has the information of network device address-source address; [0047] and fig. 5), identify a second network device to

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which the packet was sent (the packet header inherently has the information of network device address-destination address; [0048] and fig. 5), if the first or second network device is not already identified in a detected device list, adding the first or second network device to the detected device list (fig. 5), for each of at least one packet characteristic of the packet (for example, "the predetermined access threshold minimum") calculating a weight for the packet (120 in fig. 3), and updating a packet weight history for that packet characteristic of that packet in a packet weight history store (200 and 210 in fig. 3).

Regarding claim 24, Bhagavath further teaches the machine-accessible medium (36 in fig. 2) further includes data that cause the machine to: reset at least some content of the packet weight history store (the database 36 in fig. 2 is a "temporary" database, it's inherently flushed after certain time).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Bhagavath et al. (U.S. Patent Application Publication No. 20020021665 A1) in view of Yang-Huffman (U. S. Patent Application Publication No. 20030115316 A1).

Regarding claim 4, Bhagavath differs from the claimed invention in that Bhagavath does not specifically teach the control interface comprises: an SNMP interface adapted to receive SNMP commands over the least one network. However, Simple Network Management Protocol (SNMP) is a set of widely used standards for multi-vendor, interoperable network management. For example, Yang-Huffman teaches a network manager to use SNMP protocol to monitor network usage ([0005]). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to have the control interface to include an SNMP interface adapted to receive SNMP commands over the least one network, as taught by Yang-Huffman in the assembly of Bhagavath for multi-vendor, interoperable network management.

3. Claims 7-14 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Bhagavath et al. (U.S. Patent Application Publication No. 20020021665 A1) in view of Bereiter (U. S. Patent No. 6,581,104 B1).

Regarding claim 7, Bhagavath teaches a network communication system comprising: a plurality of N network devices (4 users 16 in fig. 1), 1 metering device (12 and 14 in fig. 1) and the metering device is coupled to at least one of the network

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devices (fig. 1). Bhagavath differs from the claimed invention in that Bhagavath does not specifically teach that there are a plurality of M metering devices, wherein the ratio of M:N is in the range of 1:2 to 1:512, and a server coupled to the metering devices to roll up metering reports from the metering devices. However, it's well known in the art that a typical network communication system can have up to thousands of network devices, and the overall environment is managed in a distributed manner. For example, Bereiter teaches a distributed management in such a large network. In fig. 1, there are many network device (terminal nodes) managed by different metering devices (TN gateway), and a server (TN manager 14) coupled to the metering devices (TN gateway) to roll up metering reports from the metering devices (TN gateway). Also notice that the the ratio of M:N is in the range of 1:3 to 1:4. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to use a plurality of M metering devices for a plurality of N network devices; wherein the ratio of M:N is in the range of 1:2 to 1:512 and to use a server coupled to the metering devices to roll up metering reports from the metering devices, as taught by Bereiter in the assembly of Bhagavath in order to implement a distributed management for a network communication system.

Regarding claims 8 and 9, the modified assembly of Bhagavath and Bereiter further teaches that the ratio of M:N is in the range of 1:4 to 1:128 (1:4 in fig. 1 of Bereiter, 1:4 in fig. 1 of Bhagavath).

Regarding claim 9, the modified assembly of Bhagavath and Bereiter differs from the claimed invention in that from the claimed invention in that the modified assembly of Bhagavath and Bereiter does not specifically teaches the ratio of M:N is in the range of 1:8 to 1:32. However, examiner takes an official notice that it's well known in the art the as many network devices can be added to one metering device as long as the metering device can handle them in terms of hardware and software. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include different ratios to accommodate different environments.

Regarding claim 10, the modified assembly of Bhagavath and Bereiter further teaches that the network communication system having at least two of the metering devices are coupled to respective different numbers of network devices (1 to 3 and 1 to 4 in fig. 1 of Bereiter).

Regarding claim 11, the modified assembly of Bhagavath and Bereiter further teaches that at least some of the metering devices each comprises: a packet header analyzer (element 12 in fig. 1; [0030] and [0032]; Bhagavath); a detected device list (user list) coupled to the packet header analyzer (fig. 5 of Bhagavath); and a packet weight history coupled to the detected device list (200 and 210 in fig. 3 of Bhagavath).

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Regarding claim 12, the modified assembly of Bhagavath and Bereiter further teaches that the metering devices each further comprises: a weight definition store ("designated network services(addresses)" 40 in fig. 2; [0013] and [0028]; "predetermined access threshold minimum" and "status codes" stored in the database, fig. 3 of Bhagavath); and a weight calculator coupled to the weight definition store ("designated network services(addresses)" 40 in fig. 2; elements 120 and 150 in fig. 3); the packet weight history, and the packet header analyzer (element 12 in fig. 1 of Bhagavath).

Regarding claim 13, the modified assembly of Bhagavath and Bereiter further teaches that at least some of the metering devices each comprises at least one of a network switch, a network hub, and a network router ([0011] in Bhagavath).

Regarding claim 14, the modified assembly of Bhagavath and Bereiter further teaches that at least some of the metering devices each comprises at least one of a network switch, a network hub, and a network router Bhagavath ([0011] in Bhagavath).

Regarding claims 18 and 19, Bhagavath teaches a method of metering communication network traffic, the method comprising, at each of M metering devices (elements 12 and 14 in fig. 1) variously coupled to respective ones of N network

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devices: receiving packets from network devices ([0030]); analyzing packet headers of the packets ([0030] and [0032]); and in response to the analyzing, updating a weighted packet history (elements 150, 200 and 210 in fig. 3).

Bhagavath differs from the claimed invention in that Bhagavath does not specifically teach that $N > 4$, $M > 2$, and $M:N$ is in the range of 1:4 to 1:128. However, it's well known in the art that a typical network communication system can have up to thousands of network devices, and the overall environment is managed in a distributed manner. For example, Bereiter teaches a distributed management in such a large network. In fig. 1, there are many network device (terminal nodes; $N > 4$) managed by different metering devices (TN gateways; $M > 2$); a server (TN manager 14) coupled to the metering devices (TN gateway) to roll up metering reports from the metering devices (TN gateway). Also notice that the ratio of $M:N$ is 1:4 in fig. 1. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to use a plurality of M metering devices for a plurality of N network devices; wherein that $N > 4$, $M > 2$, and $M:N$ is in the range of 1:4 to 1:128 and to use a server coupled to the metering devices to roll up metering reports from the metering devices, as taught by Bereiter in the assembly of Bhagavath in order to implement a distributed management for a network communication system.

Regarding claim 20, the modified assembly of Bhagavath and Bereiter further teaches that for each of at least one packet characteristic identified in the analyzing for

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a packet (for example, "the predetermined access threshold minimum" in Bhagavath), determining a weight definition for that packet characteristic (predetermined in Bhagavath), calculating a weight for the packet (120 in fig. 3 of Bhagavath), and using the calculated weight in the updating of the weighted packet history (200 and 210 in fig. 3 of Bhagavath).

Regarding claim 21, the modified assembly of Bhagavath and Bereiter further teaches that each of the at least one packet characteristic comprises a respective one of: communication protocol; packet size; time that the packet was sent; time that the packet was received; current average network throughput; current peak network throughput; total amount of data transferred; total amount of data transferred since some particular time; total amount of data transferred since some particular event; number of packets transferred that are in a given size range; traffic to particular addresses or ports or networks or sub-nets or network devices; traffic from particular addresses or ports or networks or sub-nets or network devices; average percentage of network utilization; peak percentage of network utilization; average number of TCP sessions open; peak number of TCP sessions open; average traffic level of a particular protocol; average traffic level of a particular protocol; and percentage mixes of specified protocols among the current network traffic ([0047] to [0055]).

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Regarding claim 22, the modified assembly of Bhagavath and Bereiter further teaches that altering the weight definition in the weight definition store (for example, "the designated network addresses" can be altered on the fly by the usage monitoring module to be the most popular addresses, [0013] in Bhagavath), of at least one packet characteristic.

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Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lina Yang whose telephone number is (571)272-3151. The examiner can normally be reached on 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 517-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LY


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